

Specification Amendments:

Please amend the specification as indicated:

Please replace the paragraph beginning on page 14, line 20 and ending on page 15, line 10 with the following paragraph:

The proposed mechanism by which silica plays a direct role in encouraging the formation of the alpha tricalcium phosphate compared to other phases such as beta tricalcium phosphate is that the silicon entities enter the hydroxyapatite crystal structure and stabilizes the alpha phase with respect to beta. It has now also been demonstrated, in accordance with a preferred embodiment, that the nature of the starting hydroxyapatite substance and the manner in which silica is added is of importance. When silica in the form of a powder is added to a commercial pure hydroxyapatite powder, and co-milled to promote mixing, the conversion product observed at high sintering temperatures of over 1000°C was β -TCP. In contrast, powders prepared according to the present invention with silica added as a metal-organic solution, converted to primarily a stabilized alpha tricalcium phosphate phase which was retained at low temperature as shown in Figure 2 at the 950°C line. This conversion is not reversible. In particular, the calcium phosphate phases are in a ratio of 50:50 to 20:80 for hydroxyapatite to alpha tricalcium phosphate. At high temperature, the doped powders show a reduction in the conversion temperature from over 1200°C for pure powders to about 950°C for silica-doped powders. As noted, this development is believed to be due to the formation of calcium silicates, whereby the stabilized resulting phase composition is retained on cooling to low temperature.